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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/341,151	07/01/1999	YUKIHISA TAKEUCHI	789-030	4816

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EXAMINER

MOONEY, MICHAEL P

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/341,131

Applicant(s)

TAKEUCHI ET AL.

Examiner

Michael P. Mooney

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 14-31 ¹⁻⁴⁰ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 and 14-31 is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☒ Claim(s) 5-13, 32-40 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,7 9-13. 6) ☐ Other:

DETAILED ACTION

This application is in condition for allowance except for the following formal matters:

Claims 5-13, 32-40 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 5-13, 32-40 have not been further treated on the merits.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Drawings

The drawings filed on 07/01/99 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftperson's Patent Drawing Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

Applicant is hereby given **ONE MONTH** from the mailing date of this letter or until the expiration of the period set in the "Notice of Allowance" (PTOL-85) or Notice of Allowability" (PTOL-37 or PTO-37), whichever is longer, to file corrected drawings.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

The prior art, either alone or in combination, does not disclose or render obvious a display device comprising a crosspiece formed at a portion other than the pixel structure between the optical waveguide plate and the actuator substrate in combination with the rest of claim 1.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than actuator elements, of an actuator substrate arranged with the actuator elements corresponding to a large number of pixels; a pressurizing step of laminating and pressurizing an optical waveguide plate (OWP) in a state in which at least the pixel structures (PSs) are not hardened, and then hardening at least the PSs in combination with the rest of claim 14.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than portions corresponding to a large number of actuator elements, of an optical waveguide plate (OWP); a pressurizing step of laminating an actuator substrate (AS) arranged with actuator elements corresponding to a large number of pixels, on the crosspiece and the pixel structures, and pressurizing the OWP and AS in directions to make approach to one another in combination with the rest of claim 15.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than actuator elements, of an actuator substrate arranged with the actuator elements corresponding to a large number of pixels; a pressurizing step of laminating a surface of the AS formed with said crosspieces and a surface of the OWP formed with said PSs with each other, and pressurizing the OWP and AS in directions to make approach to one another in combination with the rest of claim 16.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than portions corresponding to a large number of actuator elements, of an optical waveguide plate (OWP); a pressurizing step of laminating a surface of the AS formed with the SPs and a surface of the OWP formed with said crosspieces with each other, and pressurizing the OWP and AS in directions to make approach to one another in combination with the rest of claim 17.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a pixel-forming step of forming pixel structures on respective actuator elements (AEs) of an AS arranged with said AEs of a number corresponding to a large number of pixels and integrally having a plurality of crosspieces at portions other than AEs in combination with the rest of claim 18.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of

forming a plurality of crosspieces at portions other than actuator elements, of an actuator substrate arranged with the actuator elements of a number corresponding to a large number of pixels; a second laminating step of removing the plate member, and then laminating an OWP at least on the crosspieces in combination with the rest of claim 19.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than portions corresponding to a large number of pixels, of a plate member (PM); a second laminating step of removing the plate member to transfer the crosspieces and the PSs to the AS, and then laminating an OWP on at least the crosspieces in combination with the rest of claim 20.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than actuator elements, of an actuator substrate arranged with the actuator elements of a number corresponding to a large number of pixels; a second laminating step of removing the plate member to transfer the the PSs to the AS, and then laminating an OWP on at least the crosspieces in combination with the rest of claim 21.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than portions corresponding to a large number of pixels, of a plate member (PM); a second laminating step of removing

the plate member to transfer the crosspieces and the PSs to the AS, and then laminating an OWP on at least the crosspieces in combination with the rest of claim 22.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a pixel-forming step of forming pixel structures on respective actuator elements (AEs) of an AS arranged with said AEs of a number corresponding to a large number of pixels and integrally having a plurality of crosspieces at portions other than AEs in combination with the rest of claim 23.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of removing a jig, and then forming a plurality of crosspieces at portions other than actuator sections, of the actuator substrate; and a second laminating step of laminating an OWP on at least the crosspieces on the AS in combination with the rest of claim 24.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of removing a jig, and then forming a plurality of crosspieces at portions other than portions corresponding the large number of pixels, of an OWP; and a second laminating step of laminating a surface of the actuator substrate formed with the PSs and a surface of the OWP formed with the crosspieces with each other in combination with the rest of claim 25.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a first laminating step (LS) of laminating said surface of said jig formed with said size-defining members and said

Art Unit: 2877

crosspieces and a surface of said AS formed with said PSs with each other; a second LS of removing said jig to transfer said crosspieces to said actuator substrate, and then laminating an OWP on at least said crosspieces of said AS in combination with the rest of claim 26.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than actuator elements, of an actuator substrate arranged with the actuator elements corresponding to a large number of pixels; a second laminating step of removing the jig, and then laminating an OWP on at least the crosspieces on the AS in combination with the rest of claim 27.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of forming a plurality of crosspieces at portions other than actuator elements, of an actuator substrate arranged with the actuator elements corresponding to a large number of pixels; a second laminating step of removing the jig to transfer the PSs to the AS, and then laminating an OWP on at least the crosspieces on the AS in combination with the rest of claim 28.

The prior art, either alone or in combination, does not disclose or render obvious a method for producing a display device comprising a crosspiece-forming step of using a jig including, on one surface of a PM, a large number of size-defining members (SDMs) formed to have substantially the same height as that of the crosspieces to be formed on an AS to form said plurality of crosspieces at portions formed with no SDMs,

of a surface of said jig formed with said SDMs, said portions being other than portions corresponding to a large number of pixels; a second LS of removing said jig to transfer said crosspieces and said PSs to said AS, and then laminating an OWP on at least said crosspieces in combination with the rest of claim 29.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

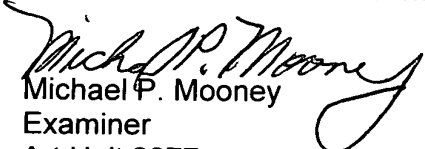
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 703-308-6125. The examiner can normally be reached during weekdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 703-308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications.

Art Unit: 2877

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-

0956. An alternative useful number for status inquiries is 703-306-3329.


Michael P. Mooney
Examiner
Art Unit 2877


Frank G. Font
Supervisory Patent Examiner
Art Unit 2877

FGF/mpm
8/23/02